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Science and Technology for Tomorrow's Air and Space Force

Success Story

AUDIO INFORMATION EXTRACTION TOOL DETECTS CRIMINAL ACTIVITY



Inmates in our nation's prison system who use prison telephones to continue their criminal activity, will now be caught through a tool that can automatically detect potential planned criminal activity from their conversations. The Information Directorate and Research Associates for Defense Conversion (RADAC) jointly developed a tool that automatically extracts information from conversational speech. The work, funded by the National Institute of Justice (NIJ), addresses a troublesome telephone problem within both federal and state prisons.



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Accomplishment

The directorate's Multisensor Exploitation Branch and RADC engineers developed an information extraction capability, called Telephone Abuse Detection Demonstration (TADD), to detect criminal activity conducted over prison telephones by inmates. The TADD uses several audio technologies to detect and recognize credit card fraud, drug solicitation, harassment, and threats to witnesses and victims.

TADD uses a spoken digit string length recognizer (over 12 digits) to detect credit card fraud and uses speaker recognition technology to recognize threats to witnesses, victims, and public officials. To further recognize criminal activity, such as planning drug solicitation, the engineers developed a speech recognizer to alert prison officials of such conversation. Detecting these types of conversations, the TADD can alert prison officials to monitor the conversation or terminate the call.

Background

The directorate's test results on a controlled database of conversations using carbon button-type phones normally found in prisons, demonstrated performance ranges from 76 to 100% in detection of the above activities. Although the directorate developed TADD for the NIJ and the Federal Bureau of Prisons, the technology has direct information extraction application to the Air Force intelligence, surveillance, and reconnaissance-monitoring mission and to Blue Force communication security.

Information
Technology Transfer

Additional information

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